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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/256,079	02/24/1999	YUMIKO KAWASAKI	837.1196/JDH	9353

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EXAMINER	
TRAN, DZUNG D	
ART UNIT	**PAPER NUMBER**
2633	16

DATE MAILED: 02/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/256,079	KAWASAKI ET AL.	
	Examiner	Art Unit	
	Dzung D Tran	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *amendment filed on 11/10/2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa U.S. patent no. 5,926,297 in view of Utsumi U.S. patent no. 6,031,644.

In considering claim 1, Ishikawa discloses a method/apparatus comprising the step of:

outputting an optical signal having a chirping determined by a chirp parameter to an optical fiber transmission line (figure 1, col. 5, lines 22-28),

converting the optical signal transmitted by said optical fiber transmission line into an electrical signal (figure 5, element 58, column 7, lines 29-30),

detecting a bit error of said electrical signal (column 18, lines 43-46), and controlling said chirp parameter so that said bit error detected is reduced (column 2, lines 29-32, column 7, lines 22-30) and the chirp parameter is set to a positive value (red shift) or set to negative value (blue shift) and the switching of a chirp parameter by the use of the sign inverting circuit (figures 5, 7, col. 7, line 66 to col. 9, line 60).

Ishikawa differs from claim 1 of the present invention in that he does not specific disclose for detecting a first error count when the chirp parameter is set to a positive value, and for detecting a second error count when the chirp parameter is set to a negative value. Utsumi discloses for detecting the error count (EC1) when the wavelength of an optical is longer than the zero dispersion wavelength (i.e. red shift, chirp parameter is positive) (figure 7) and for detecting the error count (EC2) when the wavelength of an optical is shorter than the zero dispersion wavelength (i.e. blue shift, chirp parameter is negative) (Figure 7). Since adjusting the value of the chirp parameter in response to the transmission line is well known in the art, it would have been obvious to an artisan at the time of the invention was made to include the teaching of Utsumi in the system of Ishikawa. One of ordinary skill in the art would have been motivated to do this in order to detect the error count so that wavelength of the optical signal can be controlled, thus the bit error detected decreases.

In considering claim 2, Ishikawa discloses the step of switching the sign of chirp parameter (figures 5, 7, col. 7, line 66 to col. 9, line 60).

In considering claim 3, Ishikawa further discloses Mach-Zehnder optical modulator and step of switching an operating point of Mach-Zehnder optical modulator (col. 7, line 62 to col. 8, line 10).

In considering claim 4, Ishikawa further discloses control unit for changing a bias voltage to be applied to electro-absorption optical modulator, thereby adjusting chirp parameter to an optimum value so that bit error detect is minimized (col. 7, line 42 to col. 8, line 46).

In considering claim 5, Ishikawa further discloses an electro-absorption optical modulator (col. 11, lines 63-64, 67, col. 12, line 13).

In considering claim 16, Ishikawa further discloses an optical transmitter for outputting an optical signal having a chirping determined by a chirp parameter to an optical fiber transmission line (figure 31, elements 178, 188, column 18, lines 16, 24), an optical receiver (figure 31, elements 184, 190, col. 18, lines 19-20, 23, 29) for receive supervisory information on a bit error detected in relation to the optical signal transmitted by optical transmission line, and a control unit (figure 31, element 192) for controlling chirp parameter according to a control signal (col. 18, lines 30-34).

3. Claims 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa U.S. patent no. 5,926,297 in view of Utsumi U.S. patent no. 6,031,644 and further in view of Aoki U.S. patent no. 5,315,426.

In considering claims 7 and 10, as per claims above, Ishikawa disclose first terminal device (figure 31, element 174) and second terminal device (figure 31, element 176), and an optical fiber transmission line (figure 31, element 18) connecting said first and second terminal device. First terminal device comprising an optical transmitter for outputting an optical signal having a chirping determined by a chirp parameter to an optical fiber transmission line (figure 31, elements 178, 188, column 18, lines 16, 24) and a control unit (figure 31, element 192, col. 18, lines 30-34) for controlling chirp parameter according to a control signal. Second terminal device comprising an optical receiver (figure 31, element 176), a monitor unit (figure 31, element 186) for detecting a bit error of electrical signal and for transmitting supervisory information to first terminal

whereby control signal is generated in first terminal device so that bit error detected is reduced (column 18, lines 9-58). Ishikawa further discloses the chirp parameter is set to a positive value (red shift) or set to negative value (blue shift) and the switching of a chirp parameter by the use of the sign inverting circuit (figures 5, 7, col. 7, line 66 to col. 9, line 60). Utsumi discloses for detecting the error count (EC1) when the wavelength of an optical is longer than the zero dispersion wavelength (i.e. red shift, chirp parameter is positive) (figure 7) and for detecting the error count (EC2) when the wavelength of an optical is shorter than the zero dispersion wavelength (i.e. blue shift, chirp parameter is negative) (Figure 7). The combination of Ishikawa et al. and Utsumi differ from claims 7 and 10 of the present invention in that it does not specific disclose second terminal device comprising an optical receiver for converting the optical signal transmitted by said optical said optical fiber transmission line into an electrical signal, Aoki discloses an optical receiver for converting the optical signal transmitted by said optical said optical fiber transmission line into an electrical signal (figure 2, element 32). Since photodetector is well-known in the art for convert an optical signal to electrical signal, it would have been obvious to an artisan at the time the invention was made to include a photo-detector in a receiver of Aoki in the receiver of Ishikawa in order to obtain the control electrical signals for detect a bit error signal and control the chirp parameter.

In considering claim 8, Ishikawa discloses a light source for outputting continuous wave (CW) light (figure 1, element 2, col. 4, lines 65-66) and a Mach-Zehnder modulator (figure 2, element 42, col. 5, line 43) for modulating CW light to generate an optical signal.

In considering claim 9, Ishikawa further discloses control unit for changing a bias voltage to be applied to electro-absorption optical modulator, thereby adjusting chirp parameter to an optimum value so that bit error detect is minimized (figures 5, 14-17, column 11, line 61 to col. 12, line 55).

In considering claim 11, Aoki discloses a transmitter included an optical amplifier (figure 2, element 17 and column 4, line 23).

In considering claim 12, Aoki discloses a receiver included an optical amplifier (figure 2, element 33 and column 4, line 39).

In considering claim 13, Aoki discloses an optical transmission line is provided by a dispersion shifted fiber having a zero-dispersion wavelength near 1.55 m (column 4, lines 32-34).

In considering claim 14, Ishikawa discloses the fiber optic transmission path having a zero –dispersion wavelength within a 1.3 m band (column 1, lines 59-60)

In considering claim 15, dispersion compensating fiber for compensating chromatic dispersion occurring in optical transmission line is well known in the art.

Response to Arguments

4. Applicant's arguments filed on 11/10/2003 have been fully considered but they are not persuasive.

Applicant argued that Utsumi does not teach adjustment of chirp parameter, instead Utsumi teach a method, device and system for controlling a wavelength. However, in col. 8, lines 44-65 of Ishikawa reference, Ishikawa discloses the chirp parameter as a

function relate to the wavelength. Therefore, to control the change of the wavelength is also control the chirp parameter so that the bit error detected decreases.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung Tran whose telephone number is (703) 305-0932.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Jason Chan, can be reached on (703) 305-4729.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Dzung Tran
02/20/04

JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600